claim as new and desire to secure by Letters Patent—

1. A motor-carriage having a motor-shaft, a carriage-driving shaft, and a series of connecting driving mechanisms arranged in pairs, and each having a loose member and a clutch engaging therewith, an operating-lever for the clutch of each pair, an operating-rod for said levers, mounted to slide and turn, and having radial projections varying in their position for each lever, and means for turning and reciprocating said rod, substantially as shown and described.

2. A motor-carriage having a motor-shaft, a carriage-driving shaft, and a series of connecting driving mechanisms arranged in pairs, and each having a loose member and a clutch engaging therewith, an operating-lever for the clutch of each pair, an operating-rod for said lever, mounted to slide and turn, and having a loop or staple thereon for each clutch-lever and located so as to swing over the ends of the clutch-levers when the shaft is turned, the rod lying above the end of one clutch-lever and below the end of the other, and means for turning and reciprocating the rod, substantially as shown and described.

3. A motor-carriage having a motor-shaft, a carriage-driving shaft, and a series of connecting driving mechanisms arranged in pairs, each having a loose member and a clutch member engageable therewith, a clutch-operating lever for each pair of driving mechanisms, an operating-rod for said levers, mounted to slide and turn, a loop or staple for each clutch-operating lever and carried by said rod, said loops being located so as to engage one end of the clutch-levers, the rod lying above the end of one clutch-lever and below the end of the other lever, a controlling-shaft provided with means for turning it manually, and connections from the shaft to the rod, for giving it reciprocations, a crank upon the rod, and a controlling-lever connected therewith by which it may be turned, substantially as shown and described.

4. A steering apparatus for motor-carriages, comprising a power-transmitting shaft oppositely-facing gears loosely mounted thereon, rotative connection from said gears to the propelling mechanism, clutches upon the shaft, adapted to engage and lock either gear to the shaft, means for controlling the clutches, comprising a link having an opening therein, a shaft having a threaded section, a nut thereon, and connections from said nut to the link, whereby its motion is limited, substantially as shown and described.

5. A steering apparatus for motor-carriages, comprising a power-transmitting shaft, oppositely-facing gears loosely mounted thereon, rotative connection from said gears to the propelling mechanism, clutches upon the shaft, adapted to engage and lock either gear to the shaft, means for controlling the clutches, comprising a link having an opening therein and extending parallel with the shaft, and an arm having a hub threaded on the shaft and extending through the opening in the link, substantially as shown and described.

6. A steering mechanism for motor-carriages, comprising a power-transmitting shaft, oppositely-facing gears loosely mounted thereon, rotative connection from said gears to the propelling mechanism, clutches upon the shaft, adapted to engage and lock either gear to the shaft, means for controlling the clutches, comprising a link having an opening therein and extending parallel with the shaft, an arm having a hub threaded on the shaft and extending through the opening in the link, and a hand-operated crank connected to the said link for controlling the clutches, substantially as shown and described.

7. A steering apparatus for motor-carriages, comprising a toothed fifth-wheel, a shaft having a worm thereon engaging the teeth of said fifth-weel, oppositely-facing gears loosely mounted on said shaft, rotative connection from said gears to the propelling mechanism, clutches upon the shaft, adapted to engage and lock either gear to the shaft, means for controlling the clutches, a link having an opening therein, and an arm having a hub threaded on the shaft and extending through the opening in the link, substantially as shown and described.

8. A motor-carriage having a driving-shaft extending longitudinally of the carriage and connected with the motor, a bevel-pinion upon each end of the shaft, a bevel-gear upon the rear axle of the carriage and engaging one of the said pinions, the front axle having a pivotal support permitting its swinging, a bevel-gear carried by the front axle and engaging the other pinion upon the driving-shaft, said gear consisting of concentric rings pivoted to each other by sets of pivots which are at right angles to each other, the inner ring being fixed to the axle coincident with its turning pivot, and rollers engaging the sides of the beveled toothed ring and holding the latter in engagement with its pinion.

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